

REMARKS

In this Amendment, Applicants have amended claims 21, 23 and 25 to more appropriately define the present invention. Claims 1, 2, 4-11, 14-18, and 21-25 remain pending with claims 21-25 under current examination.

Regarding the Final Office Action:

In the Final Office Action, the Examiner rejected claims 3, 12, 19, 21, 22 and 24 under 35 U.S.C. § 102(b) as being anticipated by Gurtler, et al. (U.S. Patent No. 5,424,245) (“Gurtler”);¹ rejected claims 20 and 25 under 35 U.S.C. § 103(a) as unpatentable over Gurtler in view of Wenzel, et al. (U.S. Patent 6,150,724) (“Wenzel”);² and rejected claim 23 under 35 U.S.C. § 103(a) as unpatentable over Gurtler in view of Maley (U.S. Patent 6,278,181) (“Maley”).

Applicants respectfully traverse the rejections for the following reasons.

Regarding the Rejection of Claims 21, 22 and 24 under 35 U.S.C. § 102(b):

In order to properly establish that Gurtler anticipates Applicants’ claimed invention under 35 U.S.C. § 102, each and every element of each of the claims in issue must be found, either expressly described or under principles of inherency, in that single reference. Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.”

See M.P.E.P. § 2131, quoting Richardson v. Suzuki Motor Co., 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

¹ Claims 3, 12, and 19 were canceled in Applicant’s Amendment After Final dated October 13, 2004, and thus the Examiner’s rejection with respect to these claims is moot. The Amendment After Final was entered, as indicated in the Advisory Action dated November 9, 2004.

² Claim 20 was canceled in Applicant’s Amendment After Final dated October 13, 2004, and thus the Examiner’s rejection with respect to claim 20 is moot. The Amendment After Final was entered, as indicated in the Advisory Action dated November 9, 2004.

Applicants respectfully traverse the rejection of claims 21, 22, and 24 because Gurtler does not disclose each and every element of Applicants' claimed invention.

The Examiner alleges that

"[T]he instant invention discloses that connecting terminals (4-1, 4-2 in Fig. 24) are conductive interconnect bumps. In addition, the instant Application discloses that a power supply potential or ground potential is to be applied to the through holes (3 or 5 in Fig. 25). With this understanding, Fig. 1 of Gurtler et al. clearly shows the first connecting terminals (36, 48) and the second connecting terminals (20) are distributed and arranged substantially on an entire surface of the semiconductor chip (21) and power source supply potential or ground potential (through interconnects 48, 50; col. 3, lines 39-43) is to be applied to said some of the first and second connecting terminals through conducting vias (28; col. 3, lines 9-16)." Continuation sheet of Advisory Action dated November 9, 2004.

Applicants respectfully disagree. Claim 21 recites, among other things, "some of the first connecting terminals or the second connecting terminals are distributed and arranged substantially on an entire surface of the semiconductor chip, and a power source supply potential or ground potential is to be applied to said some of the first or second connecting terminals."

The Examiner apparently contends that interconnects 36 and 48 of Gurtler together read on the claimed "some of the first connecting terminals or the second connecting terminals" which are distributed and arranged substantially on an entire surface of the semiconductor chip.

Interconnects 36, however, provide "inter-chip" connections (col. 3, lines 28-32), and are thus not connected to a "power source supply potential or ground potential." Although interconnects 48 "allow power ... to transfer between the chip system and the higher level multi-chip module system" (col. 3, lines 37-42), interconnects 48 are provided along the periphery of interconnect layer 34 shown in Fig. 1, and are not "distributed and arranged substantially on an entire surface" of the semiconductor chip. Thus, neither interconnects 36 nor 48 correspond to the claimed

some of the first connecting terminals or second connecting terminals, which are “distributed and arranged substantially on an entire surface of the semiconductor chip” and configured such that a “power supply source or ground potential” is applied thereto, as recited in claim 21.

While Applicants disagree with the Examiner’s allegation and conclusions in the Advisory Action, Applicants have amended claim 21 to further recite, among other things, “a plurality of first connecting terminals arranged on a semiconductor element formation surface side in the first semiconductor chip, and connected electrically to the semiconductor element, the first connecting terminals having substantially the same configuration.” As an illustrative example, conductive bumps 4-1 in Fig. 24 of the present application correspond to the first connecting terminals having substantially the same configuration. In contrast, in Gurtler, interconnects 36 and 48 do not have “substantially the same configuration,” as recited in claim 21.

More specifically, interconnects 36, are provided on the center part of the interconnect layer 34, and have a smaller size configuration than interconnects 48, which are provided on the peripheral part of the interconnect layer. See Fig. 1 of Gurtler. Therefore, interconnects 36 and 48 of Gurtler together can not read on the claimed “first connecting terminals” because they do not “[have] substantially the same configuration,” as recited in claim 21.

Thus, for the reasons stated above, Gurtler does not disclose each and every element of claim 21, and therefore, does not anticipate the claimed invention. Accordingly, Applicants respectfully submit that independent claim 21 is allowable, and dependent claims 22 and 24 are also allowable at least by virtue of their dependence from base claim 21.

Regarding the Rejection of Claims 25 and 23 under 35 U.S.C. § 103(a):

In the Office Action, the Examiner rejected claim 25 under 35 U.S.C. § 103(a) as being unpatentable over Gurtler in view of Wenzel; and rejected claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Gurtler in view of Maley. Applicants respectfully traverse these rejections because the Examiner has failed to establish a *prima facie* case of obviousness.

To establish *prima facie* obviousness under 35 U.S.C. § 103(a), each of three requirements must be met. First, the references, taken alone or in combination, must teach or suggest each and every element recited in the claims. See M.P.E.P. § 2143.03 (8th ed. 2001). Second, there must be some suggestion or motivation, either in the reference(s) or in the knowledge generally available to one of ordinary skill in the art, to combine or modify the reference(s) in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of these requirements must “be found in the prior art, and not be based on applicant’s disclosure.” M.P.E.P. § 2143.

Claim 25, although different in scope, includes recitations similar to claim 21. For at least the reasons discussed above regarding claim 21, Gurtler does not teach or suggest each and every element of claim 21. Wenzel, relied on by the Examiner for the teaching of “a multi-chip packaging device wherein the second semiconductor chip (102) is larger than the first semiconductor chip (104)” (Office Action at page 7), does not cure the above-discussed deficiencies of Gurtler.

Therefore, Gurtler and Wenzel, either taken alone or in combination, do not teach or suggest each and every element of claim 25. Accordingly, the rejection of claim 25 under 35 U.S.C. § 103(a) is improper, and Applicants respectfully request the Examiner to withdraw the rejection of claim 25 and the claim allowed.

Claim 23 depends from claim 21. As discussed above regarding the rejection of claim 21, Gurtler does not teach or suggest each and every element of claim 21. Maley, cited merely for the teaching of “n-th stacked (220n) multichip device” (Office Action at page 9), does not cure the above-discussed deficiencies of claim 21. Thus, Gurtler, either taken alone or in combination with Maley, does not teach or suggest at least “a plurality of first connecting terminals arranged on a semiconductor element formation surface side in the first semiconductor chip, and connected electrically to the semiconductor element, the first connecting terminals having substantially the same configuration; ... some of the first connecting terminals or the second connecting terminals are distributed and arranged substantially on an entire surface of the semiconductor chip, and a power source supply potential or ground potential is to be applied to said some of the first or second connecting terminals,” as recited in claim 21.

Therefore, claim 23 is allowable at least due to its dependence from claim 21, and Applicants respectfully request the Examiner to withdraw the rejection of claim 23 under 35 U.S.C. § 103(a).

Conclusion:

In view of the foregoing, Applicants request reconsideration of the application and submit that all of the rejections, as detailed above, should be withdrawn.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: January 13, 2005

By: Rajeev Gupta
Rajeev Gupta
Reg. No. 55,873